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THE ROADSIDE CENSUS

BY MARGARET M. NICE AND L. B. NICE

NORMAN, OKLAHOMA

Our discovery of the Roadside Census as an aid in bird study came by accident. On May 30, 1920, we started to play with our small daughter a new kind of "Roadside Euchre" by counting the Dickcissels that were lustily singing "jig-jig-jig" along each side of a five mile stretch of road. After a second Dickcissel game that same day — we found they averaged from six to eight a mile — the little girl suggested we count *all* the birds we saw on the rest of the trip, a distance of fifty miles. At first thought this seemed an impossible task for one hurrying along in an automobile, but, nevertheless, we tried it, and found it so worthwhile that by the middle of July we had taken 780 miles of Roadside Censuses.

A Roadside Census is a record of the number of birds of each kind seen along a particular road, on a particular date, between particular hours; that is, to be complete, it should tell the time, location and distance covered besides the temperature and state of the weather. Such a census has a definite, though limited, value: first, it has a distinct use in recording the abundance and distribution of certain birds; and second, it is valuable for comparative purposes, for revealing effects of different conditions of time, place and weather. Two things, however, it does not do: it does not give by any means a complete list of the birds of any region, and it does not enable one to say positively that such and such birds do not live in a certain district,

although under favorable conditions one could be practically sure in the case of some birds.

Our method of taking a Roadside Census is as follows: we have a small notebook with a pencil attached by a string, in this at the top of a page we write the date, hour, number of miles, county, place of starting and destination, and also a note as to weather. The temperature we have obtained later by writing to the local stations of the Weather Bureau. We always began a new census with a new county although sometimes it was difficult to know the county boundaries; often it was necessary to calculate from the map the number of miles from a certain town to the border of the county and turn over a page when the speedometer showed that we had reached that spot. As to the birds, we jot them down as they appear, using approximately the order of the A. O. U. Checklist, so as to know where to expect the name of each bird, an important matter when one sees several different species at a time. The numbers seen are put down after each bird's name and of course changed when occasion arises. There are usually a number of birds that have to go down under the caption "unknown"; with us the difficulty generally lay in being sure whether a few individuals were English Sparrows, Dickcissels or Grasshopper Sparrows. (In making up the totals for this paper we divided these "unknowns" between the three species in the same proportion as the "known" birds; other "unknowns" were left as such.) Naturally the person who drives the car cannot take a Roadside Census although he can often see birds on his side that the census taker misses. We find it important to copy our censuses in a permanent notebook each evening when the experience of taking them is fresh in our minds, for they are naturally difficult to read. That is one reason why it is better not to take too long a census at one time, but to start again after twenty or thirty miles because it is often hard to be sure of figures when so many have been written one after another when jolting along.

On our censuses we probably seldom saw more than a third of the breeding birds of a region; occasionally the

proportion was higher, but usually it was lower. There are certain birds that one can be sure of seeing if they are in the vicinity; they are conspicuous, fearless and nest near the roadside. For the prairies of Oklahoma, these dependable birds are Dickcissels, Mockingbirds, Mourning Doves, Meadowlarks, Lark Sparrows, Bluebirds, Kingbirds and Purple Martins. Other birds that are uncommon, shy, or prefer a different environment are only occasionally seen; such as Hawks, Crows, Cardinals, Painted Buntings, Yellow-breasted Chats, etc.

The following table gives the numbers of birds that were alike and different on three trips that were repeated a week later at different times of the day.

TABLE I.

Numbers of Species Alike when Trip was Repeated

Date	Distance	Time	Number Alike	Number Different	Per cent Alike
June 9	35 miles	11-2 P. M.	13	9	60
June 16	35 miles	4-6 P. M.	13	4	76.5
June 9	38 miles	2-5 P. M.	14	4	77.7
June 16	38 miles	12-4 P. M.	14	8	63.3
June 9	14 miles	5-6 P. M.	10	3	78
June 16	14 miles	10-11 A. M.	10	2	83.3

It will be seen that from 60 to 83 per cent of the species were alike when the same ground was covered a second time. The highest proportion was on the shortest trip where there was least chance for variety.

The forty-one censuses which form the basis of this study were all taken in Oklahoma in the summer of 1920. The country covered was of two very diferent types; most of it was level prairie, but some, especially in the eastern part of the State, was wooded and mountainous. The first two censuses were taken on a trip from Oklahoma City, which is in the center of the State, to Kingfisher county, fifty miles northwest. All the others occurred on two camping trips with Norman, twenty miles south of Oklahoma City, as a starting point. The first trip was to the Wichita Mountains, about 120 miles to the southwest. On the second trip we went directly south 60 miles to the Arbuckle Mountains, then east to the Ouachita Mountains;

northeast to Fort Smith, Arkansas; northwest to Cherokee county and from there back to Norman.

The first two censuses occurred May 30th, the others were taken from June 9th to 16th and from June 26th to July 15th. We saw, therefore, only summer birds, and, for the most part, breeding birds. In the beginning the males were much in evidence singing; a little later there was less singing but females as well as males were seen with food for the young; and by July many young were with the parents, especially Horned Larks and Mourning Doves. A few birds had begun to gather in flocks by the middle of July, as Cowbirds, Red-winged Blackbirds and Cliff Swallows; but none of these flocks were large, forty-two birds being the greatest number seen together.

Our primary object was to obtain data on the distribution and comparative abundance of birds in the State, but upon tabulating our results we found other relationships that were of interest, especially the effects of weather and of the character of the country.

The total number of native birds seen during 780 miles of Roadside Censuses was 3755, which gives an average of 4.8 birds to a mile. (In all the tables and calculations, English Sparrows are omitted entirely; they will be treated separately.)

The effects of weather, time of day, and to a small extent, the time of year, are shown in Table II.

TABLE II.

Numbers of Native Birds Seen
Showing Effect of Weather, Time of Day and Time of Year

Number of Censuses	Total Miles	Weather	Time	Average Number of Birds Seen per Mile
41	780	Mostly Pleasant	All Times	4.8
39	696	Pleasant	All Times	5.2
2	84	Rainy	All Day	1.4
26	395	Pleasant	Early Morning or Late Afternoon	6.2
13	301	Pleasant	At or Near Noon	3.9
2	50	Pleasant	May 30	10.2
11	228	Pleasant	June 9-16	3.5
11	196	Pleasant	July 12-15	6.7

Two aspects of the weather affected the numbers of birds to be seen: first, the noon heat, and second, rain. All the censuses but two were taken on days whose maximum temperature ranged from 90° F to 95° F. The exceptions were one cooler day — May 30th, when the maximum was 88° F. and one hotter day — July 3rd, when the thermometer reached 99° F. All but two of the censuses were taken on sunny days. Thus there were remarkably uniform weather conditions on thirteen of the sixteen days on which censuses were taken. The thirteen counts at or near noon occurred when the weather was undeniably hot and the inactivity of the birds is marked, for only an average of 3.9 birds per mile was seen in contrast to the 6.2 birds per mile noted in the cooler parts of the day. The effect of an all day rain, even though the temperature rose to 91° F., is even more striking in driving the birds to cover than the noon heat on sunny days, for only 1.4 birds were seen per mile instead of the 5.2 observed in pleasant weather.

We have very little data on the difference in the number of birds to be seen at different times of the year, as there are only 47 days between our first and last census. Our results stand as follows: 50 miles of censuses on May 30th gave us an average of 10.2 birds a mile; 228 miles from June 9th to 16th gave 3.5 birds a mile and 196 miles from July 12th to 15th gave 6.7 birds a mile. The distance travelled in May is so short that it is hardly comparable to the other two sets of figures. As for the June and July results, they represent the same number of censuses— eleven —, much the same number of miles, equally pleasant weather with practically the same distance travelled near noon — 73 and 76 miles, respectively, — and both were taken entirely in prairie country. Therefore they would seem as comparable as one could wish with one exception; they were taken in different parts of the State, the June censuses in the southwest, in Cleveland, Grady and Comanche counties; while the July censuses taken in the east, in Leflore, Sequoyah, Muskogee, Wagoner, Creek, Okmul-

gee and Tulsa counties. The main difference between these regions is one of humidity, the eastern counties having an annual rainfall of 35 to 40 inches and the southwestern about 30. Probably the bird life is more abundant at all times in the more luxuriant vegetation of the east than the west. So our July figures doubtless represent the effects of two causes of abundance — more favorable environment than the region visited in June as well as the actually greater number of birds to be seen in July. Although we cannot rely on the proportions as they stand, it is undoubtedly true that more birds are to be seen on a Roadside Census when the males are in full song and after the young are raised than while the young are in the nest.

The greatest number of birds seen per mile was 18 and the least 1.6 with the exception of the rainy day. The former record occurred on July 15th and was swelled by great numbers of young Mourning Doves and Horned Larks. The very small number of the other census must have been due to the unusual heat for it was taken at noon on the day when the temperature reached 99° F. The four largest and smallest censuses taken in pleasant weather are shown in Table III.

TABLE III.

The Largest and Smallest Censuses Taken in Pleasant Weather

Date	Time of Day	Distance	Place	Average Number of birds Seen per Mile
July 15	6 - 7 P. M.	11 miles	Prairie, Tulsa Co.	18
May 30	4 - 5 P. M.	10 miles	Prairie, Kingfisher Co.	13
June 9	11 - 2 P. M.	35 miles	Prairie, Grady Co.	2
July 3	12 - 2 P. M.	10 miles	Woods, Pushmataha Co.	1.6

We saw 72 different species in the 41 censuses. The average number of species seen in an average run of 20 miles was 17, while the shorter trips, averaging 7 miles, gave us 12. The effect of weather and character of country on the number of species seen is shown in Table IV.

TABLE IV.

Numbers of Different Species Seen

Showing Effects of Weather, Character of Country and Length of Trip

Number of Censuses	Character	Average Number of Miles	Average Number of Species Seen on Each Census
39	Pleasant Weather	17.8	16.6
2	Rainy Weather	42	14.5
33	Prairie	27	16
5	Woods	17	22
33	10–40 Miles	20	17
6	4–9 Miles	7	12

These figures are not directly comparable as in Tables II and III, for the average length of the different censuses varies so much. However, the depressing effect of the rain is almost as evident in the lessened numbers of species seen as in the total numbers. The greater variety of birds in a mixed environment over those on the prairie alone is evident from the 22 kinds observed on the average trip of 17 miles in woods, in comparison to the 16 seen on the average trip of 27 miles on the prairies; most of the "woods" censuses included some prairie. In this table the noon census of July 3rd is omitted because of its unusual heat; if it is included, the number of species seen in woods would be 19 on a trip of 16 miles.

The greatest number of different kinds of birds seen on any one trip was 31 and the least 4. Both of these were short trips, entirely through woods; the first was through more varied country than the second, but most of the blame for the minimum number can probably be laid to the excessive heat at that time.

TABLE V.

Largest and Smallest Number of Species

Seen on Trips of 10 Miles and Over

Date	Time of Day	Distance	Place	Average No. Species seen each Census
June 30	9 - 12 M.	12 Miles	Woods; Arbuckle Mts.	31
June 29	12 - 3 P. M.	12 Miles	Woods; Platt Nat. Park	25
June 26	11 - 12 M.	16 Miles	Prairie; Garvin Co.	9
July 3	12 - 2.P. M.	10 Miles	Woods; Pushmataha Co.	4

As to the main object of our study, the kinds of birds, their distribution and comparative abundance, Table VI gives some data in regard to the most common birds arranged in order of breadth of distribution.

TABLE VI.

The Fourteen Most Common Birds in 41 Roadside Censuses

	No. of Censuses in which each occurred	Total Number Seen	Av. No. Seen on each census where each occurred	No. Censuses in which each bird came 1st	No. Censuses in which each bird came 2nd
Western Mourning Dove	39	478	12.2	7	10
Mockingbird*	39	275	7	5	6
Dickcissel	33	687	20.8	17	4
Bluebird	31	202	6.5	6	3
Lark Sparrow *	29	166	5.4	2	2
Bob-white	29	71	2.4	0	1
Kingbird	27	102	3.8	0	0
Meadowlark*	24	213	9	0	2
Read-headed Woodpecker	23	90	4	0	2
Orchard Oriole	21	64	3	0	0
Horned Lark*	20	168	8.4	1	1
Scissor-tailed Flycatcher	20	124	6.2	0	1
Purple Martin	15	91	6	0	0
Cliff Swallow	5	99	20	2	0

It will be seen that the Mourning Dove and Mockingbird were found on practically every single census. The former were missing on two trips, the first at noon in McClain County where they were seen a week later on repeating the trip and the second on the noon census of July 3rd which has made so many exceptions. Mockingbirds were recorded on all but two censuses; one in the Wichita Mountains and the other in the Arbuckles. These two are the most adaptable of all our native birds here: Mockingbirds are found about farmhouses on the prairies and cabins in the woods, while the Mourning Dove is even more universal in its tastes for it will live in deep woods,

* In central and western Oklahoma the Mockingbirds and Lark Sparrows were the western forms but near the Arkansas border the birds were probably the eastern forms, according to information kindly given me by Dr. H. C. Oberholser. The Horned Larks were "Desert" in central Oklahoma but may have been "Prairie" in the east. The Meadowlarks were all eastern except those in Kingfisher County on the second census which were western.

in open country with few trees, or if there are no trees at all, nests upon the ground. The main variations in the distribution of the other birds depended on the distinction in environments — the prairie and the woods. The prairies are the homes of the Dickcissels, Lark Sparrows, Meadowlarks and Horned Larks; Scissor-tailed Flycatchers, Kingbirds and Orchard Orioles like the prairie with orchards, but Red-headed Woodpeckers and Bluebirds were most abundant in woods, especially where there are many girdled trees. Purple Martins depend, of course, on bird houses and as nearly every dwelling in southeastern Oklahoma has its Martin box, these birds were common there both in the woods and on the prairies. Cliff Swallows were seen on only five censuses; they were all in flocks in the northeastern prairie districts.

In order of total abundance on all 41 censuses, the birds range as follows: Dickcissels, 687; Mourning Doves, 478; Mockingbirds, 275; Meadowlarks, 213; Bluebirds, 202; Horned Larks, 168; Lark Sparrows, 166; Scissor-tailed Flycatchers, 124; Kingbirds, 102; Cliff Swallows, 99; Purple Martins, 91; Red-headed Woodpeckers, 90; Bob-whites, 71; and Orchard Orioles, 64.

Some birds had a wide distribution yet were nowhere abundant; the Bob-white was the best instance of this, as it was seen on 29 trips but only reached a total of 71. Others in this same class were Kingbirds, Red-headed Woodpeckers and Orchard Orioles. Another class were limited to a somewhat restricted range but were usually abundant where they did occur, as Horned Larks, Meadowlarks and especially Dickcissels. Only two species were almost universally distributed and at the same time abundant — the Mockingbird and Mourning Dove.

As to English Sparrows, they were, unfortunately, the most common bird of all, since we saw 1486 of them — two and a half times as many as the most abundant native bird, the Dickcissel. They constituted 28 per cent of all the birds seen. They were recorded on 33 censuses, some of the trips taken in woods and those on the Wichita Game Reserve being almost the only ones free from them. They

were the most abundant bird in 16 censuses and second most abundant in 4. They varied from none at all to 350 on one census. This great number was seen July 13th, in Muskogee County, where they apparently had repaired with all their broods to feast upon the wheat fields.

Taking a Roadside Census is a fascinating occupation and lends fresh interest to an oft-repeated or otherwise monotonous journey. Yet to do it well requires considerable field experience and a fund of persistance, for it must be done thoroughly to be of any value. These studies were made at only one season and over part of one State. It would be interesting to try this method at other times of the year, when results would necessarily be much less uniform than in the summer, and especially in other parts of the country. Much information also as to the increase and decrease of roadside birds could be gathered by repeating such censuses in later years.

In conclusion let us give two sample censuses; one over prairie in central Oklahoma and the other through woods in southeastern Oklahoma.

PRAIRIE	WOODS
Kingfisher and Oklahoma Counties. Barrows to Oklahoma City. 40 miles.*	Atoka County. From Atoka to Darwin. 23 miles. Through Woods.
May 30, 1920. 5:00–7:00 p. m.	July 3, 1920. 8:30–12:00 M.
Day's Temp. 60° – 88°. Sunny	Day's Temp. 76° – 99°. Sunny.
1 Killdeer	2 Bob-whites
68 Western Mourning Doves	8 Western Mourning Doves
2 Yellow-billed Cuckoos	7 Turkey Vultures
11 Howell Nighthawks	1 Hawk (sp?)
28 Scissor-tailed Flycatchers	1 Hairy Woodpecker
13 Kingbirds	4 Pileated Woodpeckers
2 Arkansas Kingbirds	25 Red-headed Woodpeckers
1 Crow	3 Kingbirds
3 Cowbirds	1 Crested Flycatcher
30 Meadowlarks (neglecta & magna)	1 Wood Pewee
16 Orchard Orioles	1 Orchard Oriole
1 Baltimore Oriole	5 English Sparrows
5 Bronzed Grackles	3 Western Lark Sparrows
40 English Sparrows	1 Chipping Sparrow
	1 Field Sparrow

* On May 20, 1921, from 5:00-7:30 p. m. (temperature 67-88) we repeated this trip, seeing 20 species (4 of them different from the year before) and 453 birds in all.

PRAIRIE

3 Western Grasshopper Sparrows
26 Western Lark Sparrows
2 Western Blue Grosbeaks
137 Dickcissels
6 Western Mockingbirds
1 Brown Thrasher
20 Unknown

20 species; 416 in all.

WOODS

3 Cardinals
2 Summer Tanagers
10 Purple Martins
1 Red-eyed Vireo
28 Western Mockingbirds
1 Carolina Wren
1 Tufted Titmouse
1 Plumbeous Chicadee
24 Bluebirds

24 species; 135 in all.

AN ANNOTATED LIST OF THE LAND BIRDS OF SAC COUNTY, IOWA

BY J. A. SPURRELL, OF WALL LAKE, IOWA

PART II

This paper concludes a local list of the land birds of Sac county, the first part of which appeared in the Wilson Bulletin, Vol. XXXI, No. 4 (December, 1919).

Harris Sparrow (*Zonotrichia querula*).

The Harris sparrow is a regular and abundant migrant both spring and fall. Since its migration range is so restricted, I give all the migration data I have obtained, in the table below:

SPRING MIGRATION

Year	When first seen	About No. 1st seen	Next seen	Became Common	Last seen	Remarks
1909	3-29	1	4-4	5-8	5-17	
1910	5-1	4	5-6	5-12	5-24	
1911	4-2	1	4-6	5 8	5-13	They were common at an earlier date, which I failed to record.
1912	5-3	3	5-4		5-20	I failed to record the missing date.
1913	5-1	3	5-2	5-8	5-22	
1914	3-29	3			5-24	I failed to record the missing dates.
1915	5-2	4	5-7			I failed to record the missing dates.

FALL MIGRATION

1908	9-23	5	9-27	10-4	11-8	Last one seen could not fly, as it had a broken wing.
1909	9-25	10	9-29	10-4	10 31	
1910	10-1	20	10-2	10-8	11-4	
1911	10-1	20	10-3	10-7		Field to record last date.
1912	9-16	10		10-12	11-10	First seen by Mrs. E. B. Hayden.
1913	10-2					Failed to secure other dates.

Although the dates of arrival vary widely, the dates of departure vary but little.

In the fall the dates of both arrival and departure are fairly close year after year.

The Harris Sparrow frequents groves, thickets, and hedges of willow trees, delighting in brushy places with plenty of cover. It spends much of its time scratching on the ground. In the spring it often perches in the trees from ten to fifteen feet above the ground to utter its peculiar song, usually singing in the evening.

White-crowned Sparrow (*Zonotrichia leucophrys leucophrys*).

A tolerably common migrant frequenting groves and brushy places. My first seen dates cover the period from April 26 to May 10. Mrs. E. B. Hayden reported one seen on July 10, 1913.

Intermediate or Gambel's Sparrow (*Zonotrichia leucophrys gambeli*).

Noted only once, May 1, 1912. On this day I was watching a sparrow which I took to be a white-crowned sparrow, through the eight-power binoculars at close range, but I soon saw that it was not, as the white crown was not large enough, there was no black line in front of the eye, and the lores were wholly white. Its song was similar to the white-throat's song. The bird stayed about the grove all day.

White-throated Sparrow (*Zonotrichia albicollis*).

This species is the most abundant of all the native sparrows in both spring and fall migrations. It is abundant in every grove and hedge, and even in the tall weeds along the fences. First seen dates in spring are from April 18 to May 3. It has a habit of frequenting pine or spruce trees to roost and the first sign of its arrival is usually its sharp call note, frequently repeated just before it goes to roost at dusk.

Tree Sparrow (*Spizella monticola monticola*).

An abundant migrant and winter resident. In very severe winters of abundant snowfall it is usually scarce or absent during the months of January and February. I have seen it first in the fall from October 24 to November 6. In the spring, last seen dates vary from March 20 to May 6.

Chipping Sparrow (*Spizella passerina passerina*).

This sparrow is a common migrant and a rare breeder. First seen dates are from April 16 to May 11. At two different times in the town of Wall Lake I have seen the young only recently from the nest and still being fed by the parents.

Clay-colored Sparrow (*Spizella pallida*).

A common but rather inconspicuous migrant. I have not noted it in the fall. In the spring it frequents groves and shrubbery First seen dates are from May 2 to 13.

Field Sparrow (*Spizella pusilla pusilla*).

Mrs. George May reported this species as common in the willows along the Boyer river in the spring of 1912.

Slate-colored Junco (*Junco hyemalis hyemalis*).

A very abundant spring and fall migrant. First seen dates in spring vary from March 3 to March 20, with the exception of one seen only on the day of January 6, 1913. Last seen dates in the spring are from April 9 to 23. In the fall first seen dates are from September 29 to October 8; last seen dates from November 5 to 17. Mr. Joe Abernathy reported that juncos are to be found in the timber at Sac City until February 1.

Montana Junco (*Junco montanus*).

I identified one individual of this species October 17, 1915. Following is the record entered in my notebook at the time: "I saw one through the kitchen window while it was sitting only four feet away in the boxelder tree. I saw the pink sides very distinctly and its back was more grayish than the ordinary junco's is."

Song Sparrow (*Melospiza melodia melodia*).

A common migrant. First seen dates in spring range from March 29 to April 25.

Lincoln Sparrow (*Melospiza lincolni lincolni*).

Another common but very inconspicuous migrant. First seen dates vary from May 3 to 10. I have usually seen it creeping about in the grass under or near trees or shrubbery.

Swamp Sparrow (*Melospiza georgiana*).

A common migrant and breeder. I have seen it only in marshes where there is standing water, or a very tall dense growth of slough grass. April 18 is my earliest first seen date. During the nesting season its clear song is a very pleasing feature of the marshes it frequents.

Fox Sparrow (*Passerella iliaca iliaca*).

A tolerably common spring and fall migrant. First seen dates in spring are from March 15 to April 11.

Towhee (*Pipilo erythrophthalmus erythropthalmus*).

A rare and rather irregular migrant at Wall Lake. My first dates are from March 21 to April 27. I have found the species in the woods at Sac City throughout the summer. Mr. Joe Abernathy reports it as common and nesting at Sac City.

Cardinal (*Cardinalis cardinalis cardinalis*).

I have never seen this species at Wall Lake, but Mr. C. Orville Lee and Joe Abernathy both reported it at Sac City. The latter stated that a pair spent the winter of 1913-1914 in Sac City and nested there the following summer. They can only be called rare residents of recent arrival.

Rose-breasted Grosbeak (*Zamelodia ludoviciana*).

A common migrant and nesting species. My first seen dates are from May 1 to 20. Nearly every farm grove has its pair of grosbeaks, and they are also common in the trees of the towns.

Indigo Bunting (*Passerina cyanea*).

A rare breeder and migrant. A pair once nested in the town of Wall Lake. I have found them tolerably common in June and July along the Raccoon river at Sac City. Mr. Joe Abernathy also reported seeing four pairs there.

Dickcissel (*Spiza americana*).

An abundant migrant and breeder. First seen dates vary from May 3 to 27. It usually nests in the hayfields, although somestimes nesting in the tall grass of pastures or along fence rows. I have found only one nest placed directly on the ground and that was on top of a "bog" in a wet pasture. Usually the nests are placed a few inches up among the grass or weed stems. The nests are frequently destroyed by the early cutting of clover fields. I have found many of the eggs while loading hay.

Lark Bunting (*Calamospiza melanocorys*).

I first identified this species May 19, 1908, when I saw three males in a flock with some cowbirds. They were about the size of bobolinks and had the white wing patches characteristic of lark buntings with all the rest of the plumage black. I did not see it again until May 9, 1914, when I saw one male and heard it sing. On the 22d I again saw one male; either the same or another, I am not sure which.

Scarlet Tanager (*Piranga erythromelas*).

The scarlet tanager is a rare migrant at Wall Lake. I have seen it only three times: May 22, 1905, June 9, 1907, and May 18, 1909. Mr. Lee reports it as a rare nesting species at Sac City. Mr. Joe Abernathy reported seeing four pairs there.

Purple Martin (*Progne subis subis*).

A common nesting species in the various towns of the country. Only in the fall, previous to migration, does it range any distance over the surrounding country. First seen dates in spring are from April 15 to 29.

Cliff Swallow (*Petrochelidon lunifrons lunifrons*).

An abundant migrant and formerly a common breeder. Although I think it still nests in some parts of the county, I do not know of any definite nesting records in recent years. First seen dates in spring are from April 29 to May 27. In the fall it is abundant, flying over low pastures along the streams in company with barn, bank, and tree swallows.

Barn Swallow (*Hirundo erythrogastra*).

A common migrant and breeder. Nearly every farmer's barn and most bridges have this swallow's nest in or underneath them.

Two broods are usually reared each summer. First seen dates are from April 15 to May 11.

Tree Swallow (*Iridoprocne bicolor*).

At times, a very abundant migrant, and a rare breeder. I have found only two nests, one of them in a bird box attached to a farm building, and the other in an old woodpecker hole in a fence post along a railroad track. First seen dates vary from April 18 to May 12. In the fall it is often to be found in enormous numbers about Wall lake and the "Goosepond."

Bank Swallow (*Riparia riparia*).

This species is common in some localities. The bank swallow nests in the high banks along the shores of Wall lake, and at several other places where there are steep banks or gravel pits in proximity to water. First seen dates vary from April 26 to May 15.

Rough-winged Swallow (*Stelgidopteryx serripennis*).

A common breeder along the Raccoon river, but I have never found it nesting elsewhere except that for a few years two pairs nested in holes in a cement bridge on my father's farm near Wall Lake. First seen dates are from April 28 to May 30.

Bohemian Waxwing (*Bombycilla garrula*).

Specimen in the Smith collection. A very rare or casual spring migrant. Before I started to keep notes, a flock of about fifteen visited the orchard in the spring. I can very distinctly remember the beautiful dull gray of their soft plumage. Following is my only note book entry: "May 27, 1909, I saw three Bohemian waxwings about 9 a. m.. They stayed in the tops of a couple of apple trees for a long time, eating apple blossom petals. At times they uttered a note which sounded like a shrill 'chee' to me."

Cedar Waxwing (*Bombycilla cedrorum*).

I have identified it only once, June 3, 1909, when I approached within ten feet of one which was catching small flying insects. It was much darker in plumage than the Bohemian waxwings I saw a few days before. Mrs. H. B. Smith reported cedar waxwings as common in the spring about a cedar hedge, upon the berries of which they fed.

Migrant Shrike (*Lanius ludovicianus migrans*).

A tolerably common breeder. It is not a winter resident except in rare instances. I have referred all the shrikes to this subspecies as it is the common form, although I have seen shrikes in which the rump was white or very light colored.

Red-eyed Vireo (*Vireosylva olivacea*).

Reported by Mrs. George May as common in the spring of 1912.

Warbling Vireo (*Vireosylva gilva gilva*).

Reported by Mrs. George May as very common in the spring of 1912. My sister, Rubby Spurrell, has first dates for this species from May 3 to 25. Mr. Joe Abernathy reported finding two nests north of Wall lake. I identified it May 15, 1915, largely by its song.

Blue-headed Vireo (*Lanivireo solitarius solitarius*).

Reported by Mrs. George May as rare. My sister has seen it on May 8, 1913, and May 15, 1914.

White-eyed Vireo (*Vireo griseus griseus*).

Reported by Mrs. George May as rare.

Black and White Warbler (*Mniotilta varia*).

A common and regular migrant in spring and fall. As it creeps about the tree trunks it is quite conspicuous as compared with many warblers. My first seen dates vary from May 2 to 15.

Blue-winged Warbler (*Vermivora pinus*).

Mrs. George May reported three seen in the spring of 1912.

Nashville Warbler (*Vermivora rubricapilla rubricapilla*).

I first identified this species from a dead specimen. It is a tolerably common migrant when present, but was not observed five years out of eight. First seen from May 14 to 22.

Orange-crowned Warbler (*Vermivora celata celata*).

A rare migrant. I first identified it May 23, 1915. It is difficult to be certain of a sight identification of this species, but I saw the "orange" on the head of this particular one several times.

Tennessee Warbler (*Vermivora peregrina*).

Mrs. George May reported several seen in 1912. I identified it May 16, 1915. It is a tolerably common migrant.

Northern Parula Warbler (*Compsothlypis americana usneae*).

This warbler is a rare migrant. I identified it May 13, 1913, when I obtained an excellent view of one out of a number, thru the field glasses. They were part of a "wave" of all kinds of warblers.

Cape May Warbler (*Dendroica tigrina*).

I first identified it positively May 4, 1915, although I have had glimpses of it in previous years. My sister has also observed it in years when I did not see it. It is a rare migrant.

Yellow Warbler (*Dendroica aestiva aestiva*).

An abundant migrant and common breeder. First seen dates vary from April 30 to May 12. It nests commonly in shrubbery and the nests often contain cowbird eggs. It has been my experience that the warbler always deserts its nest if the cowbird's egg is removed.

Myrtle Warbler (*Dendroica coronata*).

Ordinarily a common to abundant migrant, but in some years is almost rare. First seen dates are from April 15 to May 3.

Magnolia Warbler (*Dendroica magnolia*).

Ordinarily a common to abundant migrant, but it varies much in numbers from year to year, and was not noted three years out of eight. First seen dates vary from May 10 to 23.

Cerulean Warbler (*Dendroica cerulea*).

I have no recent records, but there is a specimen in the Smith collection that was taken locally.

Chestnut-sided Warbler (*Dendroica pensylvanica*).

A tolerably common migrant, but very irregular as to occurrence, being noted only three years out of eight. First seen dates are May 22, 1910; May 26, 1913; and May 24, 1915.

Bay-breasted Warbler (*Dendroica castanea*).

A rare migrant. I identified it May 18, 1909, and my sister saw one May 13, 1913.

Black-poll Warbler (*Dendroica striata*).

A common and fairly regular migrant, being observed six years out of nine years of observation. First seen dates range from May 10 to 21.

Blackburnian Warbler (*Dendroica fusca*).

A rare migrant. I identified it in life May 14, 1913, when I saw two males. A few years before this I examined a female specimen which a neighbor's cat had caught.

Sycamore Warbler (*Dendroica dominica albilora*).

Mrs. George May and her mother, Mrs. E. B. Hayden, saw one in Wall Lake May 13, 1913. This was during a great migration "wave" of warblers and other birds. Mr. Joe Abernathy reported one at Sac City.

Black-throated Green Warbler (*Dendroica virens*).

I first observed this species August 31, 1912, seeing an adult female which I observed closely from a short distance. In the spring I saw one May 12, 1913, and my sister saw the species May 15, 1911, and May 22, 1913. It is a rare migrant.

Palm Warbler (*Dendroica palmarum palmarum*).

A rare migrant. My first identification was May 3, 1911, when I saw two in Odebolt. I did not record it again until May 2, 1915.

Oven-bird (*Sciurus aurocapillus*).

A rare migrant. I first observed it May 26, 1910, and again May 12, 1914. My sister saw one May 11, 1914.

Water-Thrush or Grinnell's Water-Thrush (*Sciurus noveboracensis noveboracensis* and *noveboracensis notabilis*).

As it is impossible to distinguish between these subspecies without killing the bird, I include them both under one heading. A rare migrant. First identified May 15, 1913, and seen again May 10, 1914.

Louisiana Water-Thrush (*Seiurus motacilla*).

A rare migrant. I identified it on May 27, 1910, in the old railroad gravelpit south of Lake View.

Mourning Warbler (*Oporornis philadelphia*).

A rare migrant. I have seen three males, getting close enough to all of them to see the black throat patch which distinguishes it from the Connecticut warbler. Dates seen: May 4, 1911; May 26, 1913; May 23, 1915.

Maryland Yellow-throat (*Geothlypis trichas trichas*).

A common regular migrant and a rare breeder. I have found the nest built in slough grass in a wet slough. First seen dates range from May 6 to 19.

Yellow-breasted Chat (*Icteria virens virens*).

Mrs. E. B. Hayden reported seeing one at Sac City.

Wilson Warbler (*Wilsonia pusilla pusilla*).

A tolerably common and regular migrant. First seen dates vary from May 10 to 20.

Canada Warbler (*Wilsonia canadensis*).

A rare migrant. Seen by my sister on the following dates: May 20, 1912; May 26, 1913; May 23, 1914.

Redstart (*Setophaga ruticilla*).

A common and fairly regular migrant, being absent only two years out of nine. First seen dates are from May 12 to 22.

Pipit or Titlark (*Anthus rubescens*).

A rare and irregular migrant. I have always observed it on bare or plowed ground, and have never seen a flock of more than thirty. First seen dates are from May 10 to 15. I have also seen it in the fall.

Catbird (*Dumetella carolinensis*).

A common migrant and breeder. First seen dates covering twelve years vary from May 2 to 16.

Brown Thrasher (*Toxostoma rufum*).

A common migrant and a common nesting species. First seen dates vary from April 19 to May 5.

Western House Wren (*Troglodytes aedon parkmani*).

A common migrant and breeder, usually rearing two broods in a season, and nearly every farmstead has its pair of wrens. First seen dates range from April 9 and 25 to May 12. The April 9 date is an exceptionally early record.

Winter Wren (*Nannus hiemalis hiemalis*).

Only one record. I identified one October 18, 1908, in some willows along a small creek.

Short-billed Marsh Wren (*Cistothorus stellaris*).

A common migrant and also a common breeder in suitable sloughs. It will nest in sloughs where there is no standing water,

while the long-billed marsh wren will not, or at least, does not in this locality. It is very difficult to identify because of its habit of constantly bobbing back into the grass. After the first identification, it is easily told by its actions and song.

Prairie Marsh Wren (*Telmatodytes palustris iliacus*).

This subspecies of the long-billed marsh wren is a tolerably common summer resident about Wall lake and its inlet. I have no migration data for this and the preceding species because I live too far from their haunts.

Brown Creeper (*Certhia familiaris americana*).

A tolerably common migrant and a rare winter resident. It usually appears in November and departs in March or April.

White-breasted Nuthatch (*Sitta carolinensis carolinensis*).

A tolerably common winter resident and possibly a summer resident in the woods along the Raccoon river.

Red-breasted Nuthatch (*Sitta canadensis*).

A very rare migrant. One was seen by my sister May 8, 1911.

Black-capped Chickadee (*Penthestes atricapillus atricapillus*).

A common winter resident and a rare breeder in the vicinity of Wall Lake. I know of two different broods successfully reared in this vicinity. It is probably more common as a breeder in the woods.

Golden-crowned Kinglet (*Regulus satrapa satrapa*).

A rare spring and fall migrant. First seen dates in spring are: March 23 and April 19; in fall, November 11 and 17.

Ruby-crowned Kinglet (*Regulus calendula calendula*).

A common spring and fall migrant. First seen dates in spring are from April 10 to 27. I have frequently seen it flash its ruby crown in spring, and occasionally heard it sing, but never knew it to do either of these in the fall. Its song is surprisingly loud and clear for so small a bird.

Wood Thrush (*Hylocichla mustelina*).

A tolerably common migrant and breeder. It usually nests in orchard trees. First seen dates vary from May 6 to 11.

Gray-cheeked Thrush (*Hylocichla aliciae aliciae*).

A common or even abundant migrant the two or three days it is here in May. Also reported common by Mrs. George May.

Olive-backed Thrush (*Hylocichla ustulata swainsoni*).

A common to abundant migrant the two or three days it is here in May. It is found at the same time as the gray-cheeked thrush. Also reported common by Mrs. George May.

Robin (*Planesticus migratorius migratorius*).

An abundant migrant and breeder. In the year 1912 a few wintered. First seen dates cover the period from February 28 to March 29.

Bluebird (*Sialia sialis sialis*).

A rare migrant and breeder in the vicinity of Wall Lake. I have noted it oftener of late years than formerly. Along the Raccoon river it is much more common. First seen dates are from March 5 to April 26, with May 12 and 30 as extra late dates.

NOTES ON THE DISTRIBUTION AND MIGRATION OF NEBRASKA BIRDS

I. TYRANT FLYCATCHERS (*Tyrannidae*)

BY MYRON H. SWENK AND RALPH W. DAWSON

Scissor-tailed Flycatcher *Muscivora forficata* (Gmelin).

Although this striking bird is a common summer resident and breeder from southern Kansas southward, it has always been considered as of purely accidental occurrence in Nebraska. In fact, prior to the present year, there are but two known instances of its having been seen in the state. The first of these was in the fall of 1872, when L. Bruner observed a single specimen of this species south of Lincoln. The bird was very clearly seen, and, as the observer was familiar with the species, no doubt has ever attached to this record. (*Bruner, Some Notes on Nebraska Birds*, 1896, p. 114.)

The second record of this species for the state was made by Mr. Charles Armstrong in the spring of 1913. Mr. Armstrong was at the time a student in the Nebraska School of Agriculture, and during April of that year, while he was disking in the field on a farm near Greenwood, Nebraska, he saw and carefully observed one of these birds, which he had never before seen or even heard of. On returning to school he gave a very accurate description of the bird to R. W. Dawson, including the scissor-like tail and scarlet sides, and when shown the plate of this species which appeared in Bird-Lore, ix, No. 6, he at once recognized it as representing the bird he had seen. This second record, heretofore unpublished, has likewise been fully accepted by Nebraska ornithologists. However, in both the above cases the birds noted were apparently stragglers.

On May 30, 1921, while Dr. D. C. Hilton of Lincoln, was waiting outside the main entrance gate to Capital Beach he noted a Scissor-tailed Flycatcher, from the plumage evidently a female, and discovered it had a nest in the last tree of a row of small elms bordering the driveway after passing through the entrance gate. He observed the bird long and carefully, and later on in the same day both Dr. Hilton and M. H. Swenk visited the place again, this time flushing the flycatcher from her nest, which was

located about fifteen feet up in the elm tree, and observing her snapping her insect prey from the air.

Word of the find was discreetly passed around, and the bird was noted during the week by R. W. Dawson, R. H. Wolcott, H. B. Lowry and other ornithologists of Lincoln. Only the female was observed, which remained in the vicinity of the nest when not on it, and found diversion in chasing English sparrows away and quarreling in a good natured way with a Western Kingbird. On June 7, R. W. Dawson noted that the bird was paying but little attention to her nest, though remaining in the general vicinity. On June 12 he noted that she had begun the construction of a new nest, in an elm tree in the same row, the seventh tree to the north from the one in which the original nest was located. The original nest had at this time been occupied by English sparrows. The new nest was barely started on June 12. By July 3 the new nest had been completed and it, too, was occupied by English sparrows, while nothing was to be seen of the Scissor-tailed Flycatcher, nor has the bird been observed by anyone since.

The writers are indebted to Dr. D. C. Hilton for the privilege of placing his remarkable find on record, for this establishes the species as a breeder, occasionally at least, some hundreds of miles to the northeast of its previously recorded breeding range.

Kingbird *Tyrannus tyrannus* (Linnaeus).

The Kingbird is an abundant summer resident and breeder over the entire state, and in every locality where there are any trees whatever to furnish it with nesting sites. It was first recorded from Nebraska by Thomas Say, who noted its arrival at Engineer Cantonment on May 7, 1820. Maxmilian also noted it along the Burt County bank of the Missouri River on May 6, 1833. In 1877 Aughey stated that it was abundant west to the middle of the state, but from thence on to the western line of Nebraska occurred but sparingly. By 1900, however, the Kingbird was almost if not quite as common in suitable places in western Nebraska as it was farther east, except possibly along the more heavily wooded eastern Nebraska streams

In eastern Nebraska it arrives in late April or early May, nests during late May and June, and departs in late August and September. At Lincoln it has been noted as early as April 25, and is usually common after April 29. It frequently remains until September 12, and sometimes lingers as late as September 22. At Omaha it has been recorded from April 20 to September 15, thus apparently arriving there a little earlier than at Lincoln. At Neligh it arrives later and departs earlier than at Lincoln or Omaha, the dates being May 1 to 10 and September 1 to 10. (*Cary, Proc. N. O. U.*, i, p. 25).

Western Kingbird *Tyrannus verticalis* Say.

Over the semi-arid plains and sandhill regions of western and central Nebraska, from about the 100th meridian westward, and in the Pine Ridge of northwestern Nebraska, the Western or "Arkansas" Kingbird is a very common to abundant summer resident and breeder. Eastwardly over the prairie region it occurs in rapidly declining numbers to the Missiuri River, commonly as a migrant but uncommonly as a breeder.

Prior to about 1903 this Kingbird was a rather rare migrant east of the 98th meridian. In fact, a few records from Omaha, Lincoln and West Point, all of migrating birds, constituted the total information at hand concerning its occurrence in the eastern portion of Nebraska. Then in 1904 there were four records of its having been seen in the more eastern counties, these occasioning considerable interest. In 1905 it migrated through eastern Nebraska quite commonly in May, eastward even to the Missouri River, and this unusual influx was recorded by Swenk (*Auk*, xxii, p. 320) with the observation that probably the species was extending its line of migration to the eastward. Apparently such was the case, for the Kingbird has since continued to be a common migrant through eastern Nebraska each May and September.

This Kingbird arrives somewhat later than the common Kingbird. During the decade 1911-1920 the earliest date recorded at Lincoln was May 4. At Neligh Cary found it arriving May 5 to 20 (*Proc. N. O. U.*, i, p. 25). In Sioux County it is common by May 18 (*Crawford, Proc. N. O. U.*, ii, p. 77). In Nebraska nesting takes place in June and July. Departure takes place in Sioux County by about September 11 (*Mickel and Dawson, Auk*, xxxii, p. 75). At Neligh the birds linger until September 10 to 20 (*Cary, Proc. N. O. U.*, i, p. 25). They are rarely seen at Lincoln after the first few days in September.

At about the same time that the Western Kingbird began to be noted commonly during migrations in eastern Nebraska occasional instances of its nesting in that part of the state began coming to notice. As early as 1899 Cary had found it a rare summer resident at Neligh, on the 99th meridian (*Proc. N. O. U.*, i, p. 25). Then on July 15, 1904, I. S. Trostler found a nest of this species in the town of Niobrara, also on the 99th meridian, and later found three other pairs in that town which were also with little doubt nesting. Four years later, on July 26, 1908, R. H. Wolcott found a nest in a planted grove on the south side of Capital Beach, near Lincoln, and the next season, 1909, found two nesting pairs at the same place. Other instances of the nesting of this Kingbird in eastern Nebraska have come to notice with increasing frequency in subsequent seasons, and at the

present time the species is an uncommon, but not rare, breeder east to the Missouri River.

In central and western Nebraska the Western Kingbird has, of course, long been a common and characteristic breeder, along all the wooded streams, both in trees and in brush, and in hackberry pockets in the sandhills. In the western village and town parks it is very common everywhere.

The first record for the state is that of Aughey, who in 1877 reported it as abundant in southwestern Nebraska, especially along the Republican River, a status that has not changed during the subsequent years.

Cassin Kingbird *Tyrannus vociferans* Swainson.

Spreading eastward during the fall migration from its breeding locations in the more elevated mountain valleys of southern Wyoming, the Cassin Kingbird proved to be a rather common migrant in the Pine Ridge of northwestern Nebraska during September, 1919. In 1919 Mickel and Dawson collected this species near Glen on September 6, at the mouth of Monroe Canyon on September 12, and at Fort Robinson on September 20, the last specimen from a flock of 8 or 9 birds. (*Auk*, xxxii, p. 75).

Crested Flycatcher *Myiarchus crinitus crinitus* (Linnaeus).

This flycatcher is a common, or locally rather abundant, summer resident and breeder along the Missouri River and in the larger timber of its principal tributaries in eastern, and especially southeastern, Nebraska, ranging up the Elkhorn to West Point, up the Big Blue to Milford, up the Little Blue to Hastings, up Salt Creek to Lincoln, etc. At Lincoln it is common from May 3 to August 22 and sometimes lingers until September 8. Nesting records are in June. It was first recorded for the state by Thomas Say, who found it at Engineer Cantonment in 1820.

(*Myiarchus cinerascens cinerascens* (Lawrence), the Ash-throated Flycatcher, occurs commonly in Colorado and has been taken at Cheyenne, Wyoming, hence may straggle into western Nebraska.)

Phoebe *Sayornis phoebe* (Latham).

An abundant summer resident and breeder over eastern Nebraska, west to about the 99th meridian, except in the Niobrara valley, where it extends to the 100th meridian or a little beyond.

The first state record is that of Thomas Say, who noted its arrival at Engineer Cantonment on March 22, 1820. Aughey in 1877 recorded this species from Richardson, Lancaster and Dakota Counties, and indicated that it was confined rather closely to the eastern counties. It now extends west commonly at least to Hastings, Kearney, Neligh, Long Pine and Valentine.

The Phoebe has been recorded at Lincoln as early as March

12, and is usually common after March 18. It nests in late April and May and again in July, rearing two broods, and usually departs by October 21, though once recorded on November 2.

Say Phoebe *Sayornis sayus* (Bonaparte).

This shy phoebe of the dryer portions of Nebraska is a very common summer resident and breeder east to about the 100th meridian, and an increasingly uncommon or rare migrant east to about the 97th meridian.

In the Pine Ridge it is very common, and nests in the heads of the canyons, on rocky ledges in the bad lands, and around buttes on the table lands, as well as in out buildings (*Proc. N. O. U.*, ii, p. 77; iii. p. 73). In Scottsbluff County it is equally common and often nests in the structures along the irrigation ditches. At Alliance, Box Butte County, it was noted by Swenk nesting in the cornice of a building on the main street of the town, and at Haigler, Dundy County, nesting under the eaves of a railroad water tank. It nests commonly east to Cherry, Rock and Lincoln Counties. There are two broods a year, one in early May and the other in late June and early July. As a migrant it has been noted at Halsey (Chapman), Comstock (Zimmer), Kearney (Aughey), Ravenna (Swenk) and Holt County (Bruner) and once even at Lincoln (Bruner).

Aughey first recorded the Say Phoebe from the state in 1877, stating that he had observed it only in central and western Nebraska, and mostly at Kearney, Buffalo County. It arrives in early April (Comstock, April 5, 1913), completes nest building in middle May (Chadron, May 18, 1900) and departs in late September.

Eastern Olive-sided Flycatcher *Nuttallornis borealis borealis* (Swainson).

An uncommon or rare migrant over the eastern portion of the state. Aughey stated that he had "only occasionally met it in Nebraska." It has been noted several times near Lincoln; by L. Bruner, by H. B. Lowry on May 9, 1903, by Swenk and Zimmer at Roca, September 4, 1909 (*Proc. N. O. U.*, v, p. 35), by Dawson September 12, 1915, and by Dawson and Mickel May 19, 1920. Bruner has recorded it from West Point and Dickinson from Gresham.

The specimen from Roca, September 4, 1909, is a female and measures: Length 178, wing 102, tail 68, culmen 15, and tarsus 14. It is, therefore, somewhat intermediate between typical *borealis* and *majorinus*, but is nearer the former.

Rocky Mountain Olive-sided Flycatcher *Nuttallornis borealis majorinus* Bangs & Penard.

This recently differentiated form occurs in the extreme west-

ern part of the state during early June, but it is not known to breed there, though it may rarely do so. Cary collected a specimen west of Warbonnet Canyon, Sioux County, June 14, 1901 (*Proc. N. O. U.*, iii, p. 72) and Mickel one at Kimball, Kimball County, June 8, 1919 (*Auk*, xxxii, p. 75). Both specimens are females, and measure, respectively: Length, 177 and 178; wing, 106.5 and 105; tail, 71.5 and 67; culmen, 17 and 16.5; tarsus, 15.

Wood Peewee *Myiochanes virens* (Linnaeus).

A common summer resident and breeder east of the 97th meridian. At Lincoln it arrives about May 19 and remains until September 8. A record from Ashland on May 15, and two from Omaha, on May 8 and 14, would seem to indicate that the Wood Pewee appears first along the more heavily wooded streams of eastern Nebraska, and then works westwardly to the limits of its range in the state. At Omaha, Lincoln, Beatrice, Peru, Weeping Water, Nebraska City and other eastern points it is a common breeder, nesting in June.

The first state record is that of Aughey, who stated in 1877 that there were "a very few of these birds in the timber belts of eastern Nebraska along the Missouri" and recorded a specimen from Dakota City in June, 1869. Evidently since that time the species has pushed westward along the wooded streams and increased in abundance so that where it was then rare or absent it is now common. Occasionally its "*pee-a-wee*" may now be heard within the city limits of Lincoln and other cities and towns of eastern Nebraska.

Western Wood Peewee *Myiochanes richardsonii richardsonii* (Swainson).

West of the 100th meridian in Nebraska this species replaces the eastern *M. virens*, but the ranges of the two species do not anywhere meet. In the Pine Ridge Region it is a common summer resident, having been reported by every bird student working in that region. In 1900 it arrived at Monroe Canyon in the Pine Ridge May 24 (*Crawford, Proc. N. O. U.*, ii, p. 77), and in 1908 Zimmer collected it at the same place on August 19 and 22, thus indicating migration dates very similar to those of *M. virens* in eastern Nebraska. In July, 1910, he found it common at Glen, Sioux County, and collected specimens. In Scottsbluff County it is common everywhere in cottonwood groves and was found almost abundantly in the timber along the North Platte River near Henry, June 18, 1916, where several pairs were found with nearly or quite completed nests (*Swenk, Auk*, xxx, p. 115). Aughey who first recorded the species from the state, stated in 1877 that it was "frequently seen wherever there is a woodland or timber-skirted streams in western Nebraska," and recorded it from Sidney and from "Wood River," meaning probably the head-waters of that

stream in Custer or Dawson Counties, in June, 1875. Bruner noted it along the Dismal River in Thomas County, and in 1911 Zimmer found it in the shrubbery along the Loup River in the same county, August 21 to 28, collecting a male on the first date (*Proc. N. O. U.*, v, p. 81). The eastern limits of its normal breeding range are not well fixed.

Yellow-bellied Flycatcher *Empidonax flaviventris* (W. M. & S. F. Baird.

This retiring and self-effacing inhabitant of heavily shaded and excessively moist woods occurs in Nebraska only as a rare migrant east of the 97th meridian. In 1877 Aughey stated that this species occurred "sparingly in eastern Nebraska," and that he had known it "to breed on the skirts of timber belts along the Missouri River." He also mentions taking a specimen at Dakota City, Nebraska, in July, 1870. But, as *E. flaviventris* is rather strictly a Canadian zone species, and breeds in situations quite different from the habitat in which Aughey thought he found it nesting, he was probably in error in his identification of the bird. Very likely he found *E. virescens* instead, especially as he does not mention that species in his list. One might also fairly assume that his July specimen from Dakota City was likewise *E. virescens*.

L. Bruner has noted *E. flaviventris* as a migrant once each at both Lincoln and West Point, and Zimmer has recorded a specimen that was thoroughly identified by himself and R. H. Wolcott at Roca May 21, 1910 (*Proc. N. O. U.*, v, p. 35), but no specimens taken in Nebraska have been examined.

(*Empidonax difficilis difficilis* Baird, the Western Flycatcher, which represents *E. flaviventris* in the West, and breeds in Wyoming and Colorado from 10,000 feet elevation to the plains, as well as in the Black Hills region of South Dakota, will very likely be found to occur in northwestern Nebraska during migration.)

Acadian Flycatcher *Empidonax virescens* (Vieillot).

Confined during the breeding season to deep and shady woodlands, this flycatcher is to be found nesting only along the Missouri River and the more heavily wooded portions of the lower Platte. The record from West Point by Bruner is probably based on a highly colored male of *E. traillii*. At Omaha it is a fairly common summer resident and breeder, arriving in May, breeding in June and departing in September (I. S. Trostler, L. Skow, etc.).

West of the Missouri River Region there are no records of the occurrence of this flycatcher, even as a migrant, except that of Cary who states that he "took an adult male on Pine Ridge, Sioux County, Nebraska, about fifteen miles from the northwestern corner of the state, on May 26, 1900" (*Auk*, xviii, p. 235), which record was repeated by Crawford (*Proc. N. O. U.*, ii, p. 27). Ridgway accepts this as a probably casual record (*Bull. 50, U. S. N. M.*, iv,

pp. 553 and 555), and it may be valid, but a specimen taken in the same locality two days later by J. S. Hunter, and said to be the same as Cary's specimen (which we have not seen), is *E. traillii brewsteri*, as determined by Dr. H. C. Oberholser. It is therefore altogether probable that Cary's record is based on a misidentification.

Traill Flycatcher *Empidonax traillii traillii* (Audubon).

By far our most abundant and widespread species of *Empidonax*, the Traill Flycatcher, or "Alder Flycatcher" of much of the literature, occurs commonly as a summer resident and breeder and abundantly as a migrant over the state west to about the 100th meridian.

The first record of the species for Nebraska is that of Aughey who in 1877 wrote that he did not distinguish between *E. pusillus* (= *brewsteri*) and *E. traillii*, having only occasionally met either one. Although not definitely saying so, subsequent Nebraska observers have also largely not discriminated between the two subspecies of *E. traillii*.

A series of seven representative specimens taken at Lincoln May 21 to August 15, including three breeding June birds, have been examined by Dr. H. C. Oberholser and all pronounced *E. traillii traillii* (= *alnorum*). Nine additional specimens are identical with this series, and the total series of eleven males and five females proves that this is both the migratory and breeding form at Lincoln. At this point the species is common from May 3 until the end of August and has been noted as late as September 12.

At Omaha, Nebraska City, Union, Peru and other points along the Missouri River this bird has been found to be a common summer resident and breeder. M. A. Carriker, Jr., has given a good account of its habits in that region (*Proc. N. O. U.*, ii, pp. 44-46). Specimens examined from Peru, Union and South Bend are indistinguishable from the series of Lincoln specimens, though Zimmer has recorded an unusually brightly colored male specimen from Lincoln (May 20, 1909) and a large-billed female specimen from Union (July 23, 1910) as *E. t. alnorum*, under the impression that the western form previously known as *E. t. traillii* (now *E. t. brewsteri*) was the prevailing form in these localities (*Proc. N. O. U.*, v, p. 35).

West of the 97th meridian this flycatcher is found in plum thickets and other brush, especially along the rivers and creeks, to at least the 98th meridian. At Neligh Cary found it a common migrant and probably a summer resident, arriving May 5 to 20 and departing August 10 to September 1 (*Proc. N. O. U.*, i, p. 25). From west of the 98th meridian there are no records, and west of the 100th meridian it is apparently replaced by the following subspecies.

There are many nesting records of the Traill Flycatcher in eastern Nebraska, practically all of them in June.

Western Traill Flycatcher *Empidonax trailli brewsteri* Oberholser.

This is the prevailing form of *E. traillii* in the Pine Ridge of northwestern Nebraska where it is a common summer resident, and it also occurs as a migrant and occasional breeder over western Nebraska, probably from about the 100th meridian westward.

A University collecting party, working in Sioux County from May 18 to June 1, 1900, noted this bird repeatedly during that period (*Crawford, Proc. N. O. U.*, ii, p. 77), and a specimen collected in Monroe Canyon on May 28 has been pronounced *brewsteri* by Dr. H. C. Oberholser. During the summer of 1901 the "Alder Flycatcher" was observed all through the summer by Cary and Carriker, who, though they found no nests, regarded it as probably breeding (*Cary, Proc. N. O. U.*, iii, p. 73). L. M. Gates collected a specimen of *brewsteri* (Det. Oberholser) on May 21, 1914, at Haigler, Nebraska, in the extreme southeastern part of the state. Zimmer found the Traill Flycatcher in the brush along the Loup River at Halsey from May 15 to August 31, in 1911 and 1912 (*Proc. N. O. U.*, v, p. 81), and collected three specimens on August 21 and 31, 1911. Unfortunately, these specimens are juveniles, but they have the more brownish color of *brewsteri*.

Least Flycatcher *Empidonax minimus* (W. M. & S. F. Baird).

East of about the 98th meridian this, our smallest flycatcher, is a more or less common migrant, and in the northeastern part of the state, along the Missouri River, it is an uncommon summer resident and breeder. Possibly it may occur as a rare migrant farther west, but has not so been recorded as yet.

It arrives in early May. At Falls City in 1904 Swenk collected a male on May 2. At Lincoln in 1903 he collected a pair on May 9, a date considerably earlier than the other Lincoln dates, which are May 13 to 21. In the fall it is very uncommon at Lincoln, the only date being September 20, 1920 (C. E. Mickel). Apparently it usually migrates a little later than does *E. trailli* from which it is best distinguished in the field by its sharp, snappy "*che-bec*" note, very different from the shrill, jerky "*wee-zeé-up*" of the Traill Flycatcher. Cary found it a rather common spring migrant at Neligh May 10 to 20, but did not note it in the fall (*Proc. N. O. U.*, i, p. 25). L. Bruner has found it migrating at West Point.

In 1877 Aughey first recorded this species from Nebraska, stating that it was rather common and occasionally bred in the northeastern portion of the state, and recording the taking of specimens at Dakota City in May, June and July of 1865 and 1866. Dr. T. C. Stephens informs us that it nests in that locality at the present time. It also occasionally summers and breeds as far south along

the Missouri River as Omaha, according to L. Skow, I. S. Trostler and others.

Hammond Flycatcher *Empidonax hammondii* (Xantus).

The only state record of this bird, previously unpublished, is that of a specimen collected at Crawford, Nebraska, September 17, 1911, by J. T. Zimmer, and now No. 531 of his collection. It is a male, and clearly shows the characters of the species — chest dark, throat grayish, outer primary slightly longer than fifth primary, emarginate tail with outer web of outer rectrix whitish, etc., while the bill is conspicuously shorter and narrower than in *traillii* or *minimus*. It is probable that this species occurs more or less regularly, though in small numbers, in northwestern Nebraska during migrations, as the species nests in the mountains of Wyoming and Colorado, from the plains up to 8,000 feet elevation.

(*Empidonax wrightii* Baird. Wright Flycatcher. In 1901 Merritt Cary recorded what he called the Traill Flycatcher (*E. traillii*) as frequently seen around the rim rock in the rocky heads of canyons among the "wait-a-bit" brush of the western slopes of the Elk Mountain region of South Dakota, southeast of Newcastle, Wyoming, uttering at short intervals its sharp "*ke-wick, ke-wick*" (*Auk*, xviii, p. 233). However, a male specimen collected by Cary at Elk Mountain, June 10, 1900, proves to be *E. wrightii* as determined by Dr. H. C. Oberholser and there is also a female *wrightii*, collected by Cary at the same place three days earlier, before us. His description of the note of the bird agrees with the note of *wrightii* and not of *traillii*. *E. wrightii* has also been taken at Cheyenne, Wyoming, and almost without question will eventually be found migrating through the Pine Ridge of northwestern Nebraska.)

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EDITORIAL

The brightest spot in the whole summer trip, which the editor was privileged to make last summer, was the stay of his party at the Lake Okoboji McBride Lake Laboratory. It was not merely a haven of rest, after the four days of wallowing in the mud of the incomparably rich soil of Iowa, but as well a haven for study. Dr. Wylie, the Director, and Dr. Stephens, one of our ex-presidents, made our stay of three days the best three days of the whole trip. They were ably seconded by the other members of the staff of the Laboratory.

The short trip to Alaska, after the close of the automobile trip, through the Inside Passage to Skagway, and from there over the White Pass and Yukon railway to White Horse, Yukon Territory, by boat through the chain of Atlin lakes in northern British Columbia, was a fitting climax to the summer wanderings. The most notable birds seen on this trip were the swarms of short-billed gulls along the Inside Passage, and the Hudsonian chickadees and and Townsend's solitaire in the lodge-pole pine forests at White Horse. There was some evidence of a small nesting colony of herring gulls at the north end of lake Bennett. We were there between the visitations of the mosquitoes and the "noseeums," therefore our stay was a pleasant one. If there were migrations in progress no evidence of such could be seen. The weather was cool.

Never in the history of the Wilson Ornithological Club has such a wealth of good material been offered for publication. To the editor it is becoming not only clear but imperative that some plan should be devised immediately whereby more of these papers can be published. The most obvious plan would be to increase the number of pages to 64 per issue, and for this increase in value charge larger membership fees and subscription rates. There is no likelihood that publication prices will ever reach the pre-war rates, or even approach them, at least for some years to come. Reduction of the size of the Wilson Bulletin with membership dues and subscription rates remaining the same would be suicidal. Members should plan to be present at the next annual meeting and be prepared to reach a solution of this problem. It is vital.

COMMUNICATIONS

THE WORK OF THE WILSON CLUB

The question is frequently asked of me by our new members to define, in my capacity as Secretary, just what is the definite work and aim of the Club. As the recipient of a considerable volume of correspondence from our membership, perhaps I may be pardoned for this communication and the ideas set forth.

Among our membership are all sorts and kinds of students of bird life, ranging from those who are interested in the so-called "popular" side of bird study to those who have attained distinction in technical and taxonomic work. Assuming that the major trend of our work should conform to the interests of that large and substantial body of members who have supported the Club through the "lean years" of its existence, it would seem that our ideal work is the detailed, serious and accurate study of our native birds. True as it is that many volumes have been written on the subject and that the several ornithological magazines have published thousands of pages of valuable contributions on the habits of birds, yet none but the misinformed would say that the subject had been exhausted. The formulating of an accurate local list should be the backbone of the work of every observer and this task will require constant revisions and additions as years go by. The annotations to such a list represent the cream of the ornithologist's work and should contain only accurate and substantiated facts as to the breeding or other occurrence of the species at all seasons. Such a list should not be rushed into print for obvious reasons. Supplementing this work it has well been recommended that the observer should specialize on some particular phase of bird study. This may be migration, nesting habits, distribution, bird banding, research, economic investigation or detailed studies of the life histories of certain species. Almost without exception we are hampered by lack of time in our pursuit of bird study. With most of us only recreation hours from our bread and butter struggle are available. For this reason it is well to specialize in order that whatever phase of bird study we undertake may be well done. Most commendable indeed is the observer who balks at no hardships in his efforts to secure accurate and complete information and who possesses the energy and ability to put the result of his work into print where it will be readily available for the use of others. I have known of men who have spent the better part of a lifetime afield and who have built up wonderfully complete ornithological collections, including much rare material; yet these men are practically unheard of. They contributed but little to our fund of information on bird life either because they kept no sys-

tematic notes or because of their procrastination about putting them into printer's ink. The writer does not decry the formation of collections of birds, nests and eggs, but rather advocates them as a means of acquiring knowledge and substantiating ornithological information. (The cats in one suburban block will destroy more song birds in a season than most ornithologists would care to collect in a lifetime.) If, however, one finds that in making such a collection he is merely prompted by a desire for accumulation, or if it is robbing him of time needed for the keeping of systematic notes and for their preparation for publication, then he had best desist in his collecting.

Finally, I would call attention to the work of the U. S. Biological Survey at Washington and the desirability of our coöperating with this Bureau. Migration notes are solicited by the organization and blanks are cheerfully furnished for the purpose. Volunteers are needed in every section for making bird counts and to assist with bird banding. Local lists are also desired and are needed for those whose duty it is to prepare distributional papers. Preliminary local lists, not yet sufficiently complete to offer for publication, should be put in the hands of the Biological Survey and revised from time to time. There are many other ways in which active field workers can render valuable service to The Survey and in turn secure from it much desirable assistance.

I trust that in this rather rambling communication I have clearly given my ideas of the answer to the question mentioned in the first paragraph and that our new members at least will find in it some suggestion for properly directing their activities in the absorbing study of ornithology.

ALBERT F. GANIER.
Secretary W. O. C.

Nashville, Tenn., May 25, 1921.

FIELD NOTES

PHOTOGRAPHING A KILDEER

The extreme wariness of the Kildeer about its eggs is well known and many an account has been written of the tricks employed by the would-be nest finder to remain in the premises in

order to watch the owner settle upon her real nest and eggs. Before the April snows had entirely left the ground, Mr. Howard T. Middleton happened upon the nest shown in the above picture and laid plans to secure a series of pictures of the bird at her nest. The field was being ploughed at the time and a spadeful of turf, containing the nest, was shifted a few feet to freshly ploughed soil. By means of light cord and small pulleys a contrivance was rigged up by which the parent would snap the shutter when she settled upon her eggs. The feature of this mechanism was a small "snap" mouse trap which the bird could spring with a light pressure on the cord and which in turn exerted a strong pull on the shutter. Through the courtesy of Kodakery we are enabled to reproduce one of the series of five pictures printed in its August number.

A. F. G.

A WHITE COWBIRD

(*Molothrus ater ater*)

On April 15, 1921, Mrs. A. J. Williams of Norman, Oklahoma, called me up, saying there was a "white Cow-blackbird" near her house. On going over there I saw it among a large flock of ordinary Cowbirds and watched it for twenty minutes through field glasses, seeing it in various positions and being able to approach it closely. One foot seemed to be crippled so that it did not walk, but had to hop on the other foot. Its feathers looked somewhat ruffled. Above it appeared to be pure white; but underneath, its

tail was slightly pinkish and there were faint dark stripes on its breast. It was strikingly conspicuous in contrast with the other birds both in flight and on the ground.

MARGARET M. NICE.

Norman, Okla.

COWBIRD LAYS IN PROTHONOTARY'S NEST

The writer does not remember having read of the Prothonotary Warbler (*Protonotaria citrea*) as being among the list of birds imposed upon by the Cowbird (*Molothrus ater*). While collecting on May 22 of this year at Horn Lake, in the southwest corner of Tennessee, the writer found several incomplete nests of this warbler as well as one containing three fresh eggs. On the following day the set was collected, and in the meantime another egg of the Prothonotary and one of the Cowbird had been deposited. The nest was built in a willow stub in a submerged willow woods and was several hundred feet from the shore. An old woodpecker's hole had been used, the eggs being about six inches below the hole. The Cowbird is not a common breeding bird in the lower Mississippi valley. Further south, at Vicksburg, Miss., years ago, of hundreds of nests examined only in one instance was a Cowbird egg found. At Nashville, Tenn., less than one per cent of small nests found hold the eggs of the species.

ALBERT F. GANIER.

Nashville, Tenn.

NOTES FROM ASHTABULA COUNTY, OHIO

White-winged Crossbill. During the winter of 1919-20 I added this species to my list of the birds of this county. Late in November a large flock began to arrive, and remained until the first of March.

Bohemian Waxwing: On December 22 a flock of 32 settled in an apple tree in front of the house. Small flocks were seen until February 18, 1920.

Red Crossbill: On January 20, 1920, a flock of 20 settled in an open field near where I was at work and remained in the neighborhood until the 30th.

Evening Grosbeak: On January 17, 1920, I found one in a small willow tree on the border of a creek, and on the 19th there were two in a thorn bush near the same place. Others were seen at different times until February 15.

Orange-crowned Warbler: On April 29 I found three in a small thicket of swamp white oaks. They remained in the neighborhood until May 9.

Olive-sided Flycatcher: On May 15 I found this species, the first time for the county.

Blue Grosbeak: While looking for birds, on May 21, attention

was attracted to a bird in a thicket of wild crabapples, which I at first sight took to be an Indigo Bunting, but it seemed too large, and of a darker hue, with the distinct wing markings of the Blue Grosbeak. The bird remained very quiet and in full view for at least ten minutes, during which time it was not over twenty-five feet from me.

All of the species are additions to my list of the birds of Ashtabula county.

S. V. Wharram.

Austinburg, Ohio.

TUFTED TITMOUSE IN MINNESOTA

The recording of a Tufted Timouse (*Bacolophus b. bicolor*) in Minnesota is quite unusual, hence the following should be of interest. A single bird of this species was first noted shorted before Christmas, 1920, with a flock of Chickadees, in whose company it remained throughout the winter. The flock spent most of the time among the evergreens of a cemetery, near Northfield, and the Titmouse could be seen almost any day. Toward the latter part of March the Chickadees had paired off and on the twenty-third the Titmouse was found deserted. Fearing that it too would leave the vicinity, and wishing the specimen, I secured it on that day. It proved to be a female, and according to Dr. T. S. Roberts is, so far as he is aware, the first specimen that has been taken within the state. There are seven published records of its occurrence here, of which I have knowledge, and I have word that two or three others have been noted in the state the past winter.

A Myrtle Warbler was noted here on April 10th, which is very early for southeastern Minnesota. The past winter was milder than usual and Juncos, Crows and Brown Creepers were present. A Mourning Dove was noted December 25th at Kingsley, in the northern part of Iowa.

E. W. Johns.

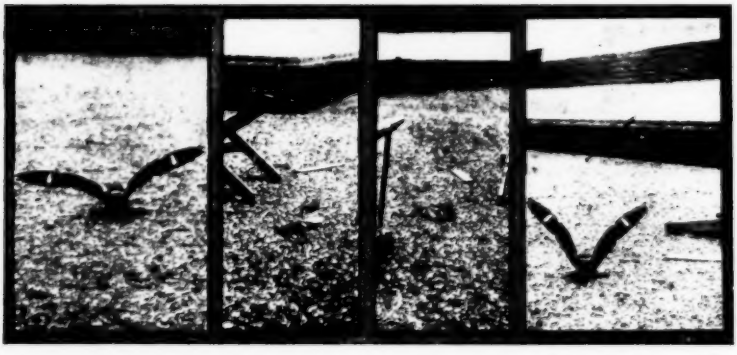
Northfield, Minn.

ROOF-NESTING NIGHTHAWKS

The Nighthawk (*Chordeiles virginianus virginianus*) gets its first name from two Greek words that mean "Sounder of the Evening Lyre." People of Nashville, Tennessee, will readily admit that part of this title is well selected, though they would be slow to find very much music in his calls. In recent years these birds have taken over the gravel roofs of certain buildings right in the heart of the city, presumably to see that their offspring got a place in the sun quite early in their careers. Late in the afternoon and far into the night one can hear the shrill far-sounding "B-e-e-r-b." Ofttimes they swoop down near the ground and their voices sound

above the roar of traffic and the din of auto engines. It is extremely rare that one hears their "B-o-o-m" in the city, but their country cousins are as versatile in these death-defying nose dives as a tramp aviator at a county fair.

A pair of them has taken to "Culture" with a vengeance, hav-



ing for two summers made their home on the roof of the "Home Economics Building" on the campus of "George Peabody College for Teachers." Like many intellectual families the number of offspring is limited and the accompanying picture will show how Mother Chordeiles accepted the social call paid her on a recent morning in mid-July.

GEORGE R. MAYFIELD.

Nashville, Tenn.

WOODCOCK INCREASING

The Woodcock (*philohela minor*) has for a good many years been looked upon the country over as a rare bird and one which has been losing ground to the extent that its extinction has been freely predicted. It has therefore been the source of much gratification to the writer to note the gradual increase of these birds, in the vicinity of Nashville, Tenn., during the past few years. Eight or ten years ago the hunting season for Bob-white was curtailed so that it expired January 1st instead of March 1st. The measure helped materially to restore this species to a semblance of their former abundance, but in a far more marked degree did it give succor to the hard pressed Woodcock. When the "quail" hunters go afield on November 1st most of our Woodcock have migrated further south and few are killed during the two months of the open season. As is well known, the Woodcock is an early breeder and, in this locality, lays its eggs before March 1st. During the former extended hunting season they returned to their favorite nesting grounds while the gunners were still afield and fell easy victims.

The shortened season, however, has practically given them immunity from hunters except of course from a lawless few. Without making any particular search for them, the writer has located not less than a dozen breeding pair, close to town, including three pair almost within the city limits. Considering the relatively small amount of ground covered in my field work it can readily be seen that the Woodcock population must by now be considerable.

Having thus attested to the fruits which have been reaped through protection it becomes my painful duty to record that our local legislators have recently passed a measure, again extending the season on Bob-white to March 1st, within the limits of this county. The bill was "slipped over" during the last few days of the legislative session and passed due to the fact that a self-seeking Game and Fish Commissioner failed to apprise local conservationists of the new law. The very fact that "quail" hunters will be abroad until March 1st, until the law can be repealed, means a backset to our local Woodcock that is disheartening, since few heed, or know of the Federal protection afforded them after January 1st. Bob-white, being neither classified as song or migratory game bird, is subject to no Federal protection at present, but if, by national statute, its pursuit could be eliminated after February 1st, the Woodcock throughout the country would profit thereby and hold their own at least.

ALBERT F. GANIER.

Nashville, Tenn.

"REMIGRATION OF BIRDS"

Instances of the "remigration" of birds, which formed the subject of your recent communication from Gordon Wilson, of Bowling Green, Ky., have been repeatedly noted here. During such spells of very warm weather as were frequently experienced all over the country this winter just passed, our thousands of visiting waterfowl would disappear so completely that hardly a duck or goose would be sighted by hunters for weeks at a time; but the first hint of a coming norther refilled the marshes with the hordes, whose overhead cries can be heard locally any still day or night from September till about the middle of March.

The same holds with regard to perching birds; in very cold snaps even such species as robins, bluebirds, flickers, and many others that do not ordinarily come as far down as the coastal lowlands, with our total lack of trees, are seen in small companies that vanish coincidently with the dying out of the high winds that follow immediately upon their appearance.

Last year, for the first time within my experience, and this extends over a space of eighteen migratory seasons, the first of our martins to appear turned back, after trying to tough out a rather prolonged late cold snap for two days, and did not reappear for more than a week.

Among the birds of apparently limited migration that spent the cold months here are many of our own kinds; they join their southern relatives for varying periods of time, mostly in immense flocks, like the five or six representatives of the blackbird family; or the droves of English sparrows that arrive in flocks early in September; and seek out the rice fields and wild grass stretches of the open prairies.

Catbirds, shrikes, mockingbirds, and their immediate kin, appear and disappear with the shifts in the weather; usually in twos or threes of their own kind, although the three named seem fond of traveling in each other's company.

I have in my miniature aviary a female mockingbird which flew against the screened porch where I had a crippled male until I was afraid a cat would certainly get her; so finally opened the door and let her in with my other birds, where she is perfectly satisfied.

She is a little smaller and darker than our large boldly marked East Texas-West Louisiana mockingbirds, and instead of their sophisticated cold grey eyes hers are of a warm amber. Presumably she is from one of the states north of Texas and Louisiana; but in size and the dullness of her markings she reminds me of the mockingbirds found in the extreme west and northwest of this state, also in upper Mexico and New Mexico.

And since a Groove-billed Ani, whose range is so very far west and south of this section, was shot within a few miles of town last year I have wondered if she might not also have been forced beyond the borders of her natural limits by some such untoward circumstance as brought the ani here.

Also, in other years, several other wanderers from the habitual migratory trails of their kind.

Mrs. Bruce Reid.

Gulf Refinery, Port Arthur, Texas.

A CROW SUICIDE

A friend has told me the following interesting story of a crow committing suicide:

On the afternoon of May 29, 1921, while returning from a swim in Buffalo Creek with several other boys, my friend says they found a crow that was apparently sick or crippled in some way, for it was able to walk but could not fly. Thinking to have some fun, they caught the unfortunate bird and tossed him into a nearby pond (certainly a very disrespectful way to treat a fellow citizen). The pond was very shallow, according to his account, and the crow could have easily waded out had he been so inclined, but instead, thinking perhaps that death awaited him at the shore, he deliberately put his head under water and soon drowned. Whether the pond *was* shallow may be open to question, but if all details are correct it was surely a pure case of suicide.

In *Bird-Lore* for Nov.-Dec. 1915 (page 479) Mr. Forbush tells (quoted by Pearson) of wounded Surf Scoters diving and holding to water plants until they drown in order to escape hunters, but other than this and the instance cited above, as far as my recollection goes, I know of no cases where birds have actually taken their own lives. Perhaps some of our readers can furnish additional information on this subject.

FRED J. PIERCE.

Winthrop, Iowa.

WOODCOCK AND OTHER NOTES FROM ARKANSAS

In March, 1920, the writer saw an American Woodcock in a thickly wooded pasture near Fayetteville, Arkansas. This species formerly nested in this region but has not been observed for many years in any of its former summer haunts. While recently in Dardanelle, and the guest of my keen-eyed and accurate sportsman friend, Mr. G. E. Pilquist, I got the following facts about the nesting of a pair of Woodcock this season in that vicinity.

Dardanelle is on the right branch of the Arkansas River near the famous Dardanelle Rock, around which cluster many Indian legends. Nearby is Mount Nebo, a beautiful isolated peak of the Ozarkian uplift, rivalling Mount Magazine in beauty but not quite attaining its elevation of more than 2800 feet. The swamps and woodlands in this region are particularly inviting to the birds and the streams abound in fish. Considerable game still exists and pearlers and trappers find it still more or less profitable to explore the rivers for their treasures.

About the sixteenth of March a report was brought to Mr. Pilquist of the nesting of a pair of Woodcock about six miles southwest of Dardanelle and some three and one-half miles south of Mt. Nebo. The locality was fully five miles from the Arkansas River. He immediately made an effort to visit the nest. Competent eyewitnesses identified the species, and on the thirtieth of March Mr. Pilquist himself visited the nest, which was placed in a stubble of burned sedge grass, the clump being surrounded with water at the time the bird was seen. The nest was typical in every respect and not more than one hundred yards from a small creek. On the 31st of March the four eggs hatched.

It may be well for the writer to submit here without comment, a list of birds already observed as nesting in this region, specifying those of which eggs have been actually collected with a star. It is possible, of course, to greatly extend this list, and we fully hope to do this as opportunity will permit:

Wood Duck, Great Blue Heron, Green Heron, King Rail?, American Woodcock, *Bob-white, Wild Turkey (nest in adjoining county visited in 1920), *Mourning Dove, *Turkey Vulture (1921), *Cooper's Hawk, *Red-shouldered Hawk, Red-tailed Hawk, American

Sparrow Hawk, American Barn Owl, Great Horned Owl, Barred Owl?, *Screech Owl, Yellow-billed Cuckoo, Belted Kingfisher, Hairy Woodpecker, *Southern Downy Woodpecker, *Pileated Woodpecker (six nests have been located this season; two sets of eggs have been taken, one clutch of four and one of five), *Red-bellied Woodpecker, *Red-headed Woodpecker, *Northern Flicker, Chuck-will's-widow, *Chimney Swift, Ruby-throated Hummingbird, Kingbird, Crested Flycatcher, Phoebe, Wood Pewee, *Blue Jay, *American Crow, *Cowbird, Red-winged Blackbird, *Bronzed Grackle, *Southern Meadowlark, Baltimore Oriole, *Orchard Oriole, Grasshopper Sparrow, *Field Sparrow, *Lark Sparrow, Chipping Sparrow, *Cardinal, Blue Grossbeak, *Indigo Bunting, *Summer Tanager, *Purple Martin, Rough-winged Swallow, Migrant Shrike, White-eyed Vireo, Prothonotary Warbler, Maryland Yellow-throat, *Yellow-breasted Chat, Oven-bird?, *Mockingbird, *Catbird, *Brown Thrasher, *Bewick Wren, *Tufted Titmouse, *Chickadee, *Wood Thrush, *Southern Robin, *Bluebird.

H. E. Wheeler.

Conway, Ark.

THE PRAIRIE WARBLER

In ten or twelve years of bird study it had never been my privilege to see a Prairie Warbler. On August 13, 1917, while spending the day at Sulphur Lick Springs, Ross County, Ohio, a friend and I were looking for birds as usual, when we suddenly came upon what we recognized at first glance to be a male Prairie Warbler. He was not shy and we succeeded in getting near enough to see that he did not have the salmon patch on the back, but upon looking it up found that Prairies do not always show that color in the early fall. As "Birds of Ohio" by Dawson says "not known to breed in Ohio" and also an early fall migrant, we were not sure but it might be a migrant at this date.

On June 11, 1919, two other men and I were walking over the hills of Ross county, Ohio, near Bainbridge, probably then ten miles from Sulphur Lick Springs where we had previously seen the Prairie Warbler, when I heard a new song which I knew at once to be the song of a Warbler, but a new one to me. It sounded but a short distance away and I excused myself and started in the direction of the song. To my delight it flew toward me and alighted in a bush not more than twenty feet away. Behold! a male Prairie Warbler in all his beauty, threw back his head and sang! A song reminding me very much of the Blue-wing a little more musical and having more volume. In walking probably a mile on that hillside, I heard the song of as many as ten or twelve.

There being so many in one place and at that date, I knew

that I had discovered the nesting place of the Prairie Warbler in Ohio.

But not content without further facts, on July 6 Mrs. Henderson, Ted and I started for the hills of Ross County, a distance of some forty miles of very hilly roads. We arrived about noon at this farm, and after climbing the high hill or near mountain, and reaching the far side of the hill we were almost exhausted, for it was excessively hot. The hillside was steep, facing the direct rays of the sun and the undergrowth was not large enough to provide shade, so we had to grin and bear it as long as we could. Reaching the vicinity of the former visit, we heard the song and soon located a male Prairie. At this place the timber and undergrowth was too thick to follow so we went farther, hearing the song frequently.

On a large hillside, which had been cleared of timber several years before and allowed to grow up again in blackberry bushes and undergrowth of from three to ten feet high, was an excellent place for nesting and they evidently like a warm place. It was here that we heard them most. Hearing one near us we located him in a bush fifteen feet away about two feet from the ground with a worm in his mouth. We were so delighted, for certainly we were going to find a nest with young. He sang with the worm in his mouth just the same. He disappeared in a clump of bushes near by and in a few seconds came out without the worm and flew away. As we approached the bush we saw another Warbler not so highly colored as the male, that flew away in the direction of the male, and we felt sure from the color and the mode of flight and actions it must be a nearly full fledged young. We were unable to find any trace of a nest so we concluded that the male was feeding this youngster.

As we had spent so much time on this hillside in the boiling hot sun, without water, we felt we could stand it no longer and left, without actually seeing the nest, but certainly convinced we had definitely located the nesting place of the Prairie Warbler in Ohio. We now have no doubt that the first one we had seen at Sulphur Lick Springs two years before was a summer resident.

Again on May 30, 1920, we were at Fort Hill, Highland County, this State, probably ten miles from the places mentioned above but in the same range of hills. We were on the lookout for strangers in our local ornithology. We had earlier heard notes in this section that had puzzled us but failed to locate the author on this trip. We made the second trip on June 13. While hunting on a hillside near the fort we heard a Prairie singing. We went in the direction of the song and soon found ourselves in the midst of dozens of them, singing everywhere, males and females. Evidently they were not nesting yet as we could not locate a single nest, but there they were, perfectly at home in

practically the same surroundings we had found them in before, an open hillside of briars and second growth, ground that had been cleared years before and allowed to grow up again, facing the south.

We moved on probably two miles in the same range of hills and stopped along the road in a cool shady place for lunch. In the trees and bushes all around us were singing Prairie Warblers, dozens of them, on the same kind of a hillside, except probably a few larger trees. Prairie Warblers, instead of being strangers in this part of the state suddenly became common. But no where else have we ever seen the Prairie Warbler. If any of the readers of this magazine should know of their nesting in Ohio we would be pleased to know of it.

H. N. Henderson.

Wilmington, Ohio.

THE MEADOWLARK AS A CONVERSATIONALIST

The first thing one usually notices about a bird is its notes, plumage or a peculiar habit. These things take first place in memory. A bird's song is frequently its most prominent and pleasing characteristic, and were it not for it a great many birds would never be noticed by the majority of people.

Much has been written in praise of America's bird singers; some poets and authors praise one bird, while others laud another. In my estimation the Meadowlark and certain members of the Thrasher family rank very near first as singers, but I am unable to say which is really the best. However, I believe the Meadowlark's song is the most appreciated, for he comes early in the spring, when there are few birds with us, and it is very doubtful whether any of the later birds can equal his song in either quality or variety.

A study of the Meadowlark's musical vocabulary is a very fascinating one and does not require a great deal of effort, providing, of course, one lives near a region of prairie land within the Meadowlark's range. In the spring months go to a sizable meadow, or better, to a slough where slough grass and other vegetation grow in rank profusion. It is here the Meadowlark is found. If you are a farmer and your work lies nearby, you are indeed fortunate, for several weeks may be profitably spent in such a location before all of the Meadowlarks' songs will be heard.

The Meadowlark is a great conversationalist. He talks to you from morning till night; it matters not what the weather—storm and sunshine are the same. He sings from tree, ground, or in the air, but a fence post, when available, seems to be his favorite perch. Except in infrequent cases, every Meadowlark

seems to have but one song (at least for one day), which he repeats at short intervals throughout the spring months. However, in a large field one can hear a dozen Larks all singing a different tune at the same time.

Now if we were to take these songs, put them together, and assume that they were given by one bird we would have quite an interesting one-sided conversation. It would run something like this: We see the Meadowlark standing on a post repeating, "*Oh, yes, I am a pretty-little-bird*" (the "*pretty-little-bird*" winds up with a trill). In a moment he says, "*I'm-going to-eat pretty-soon.*" Then, suiting the action to the word, he drops out of sight into the grass, and presently we hear him say, "*I eat 'im clean off, I eat 'im clean off*" (this is often followed by "*Yup*"). He flies back to his perch with a bug in his bill, and when he has deliberately eaten it, he—in a fast, sing-song and unmusical voice—says, "*It makes me feel very good.*" From another portion of the field a voice calls, "*Hey, come here, you red-headed Coolie!*" It is probably the irate "Mrs." After hastily cautioning us, "*You needn't shoot my brother Bill,*" the hen-pecked (we imagine) husband flies away with a sputtering note, leaving us with a good opinion of his work as a bug destroyer and musician.*

The average bird's song is given so rapidly and is of such a bird-like quality that an attempt to put it into words is quite impossible if the writer would have his readers understand them as he writes them. With the Meadowlark it is different; the notes are given plainly and with about the same speed as the human voice talks, so are easily put into words.

FRED J. PIERCE.

Winthrop, Iowa.

ARE BIRDS WEATHER PROPHETS?

In looking through an old record book, I found a curious note about birds oiling their feathers before a storm. It is of an interrogative nature, and I pass it on to the reader with the hope that it will at least be of interest, even though no conclusions are reached.

It seems I had heard some one say that birds were endowed with remarkable powers of observation, could tell when a storm was approaching, and had forethought enough to use their secretion of oil on their feathers to make them more waterproof. This wierd and, as perhaps I should say, unreasonable story, interested me. One lady told me that she had watched Mourning Doves industriously oil their coats before a mid-summer rain, but further

* Many other phrases are in common use with Meadowlarks, but the ones given above are the ones most frequently heard and easily understood.

than this I could get no information, and after making a note of it the subject was forgotten.

Birds would be as likely to preen their feathers before a storm as at any other time, and it might be easy to imagine a connection in this respect, while a definite answer would be very difficult to obtain. If any reader has ready information on this subject, I should be very grateful if he would impart it.

FRED J. PIERCE.

Winthrop, Iowa.

CARDINALS AT WAYALUSING, WISCONSIN

Mr. Howard Clark Brown's notes on the Cardinal lead me to offer my experiences with the species here. While I was making a bird count in the woods in summer I found fully as many cardinals as we find here in winter. They were about their nesting activities, and of course secretive and not easy to find. In the winter they find the food easier to get and more abundant at the lunch counters than in the woods, therefore one finds them plentiful in places where they are easily seen. They break up the big kernels of corn with a sort of churning movement of their bills. I once saw a male cardinal feed his mate while she was sitting on the nest. He broke the kernels of corn up and then fed the pieces one by one to the female, putting them into her bill. In the winter one is sure to find cardinals about corn cribs where the corn can be gotten at. Cardinals also like nut meats and squash and pumpkin seeds. Like many of our native birds they are tormented by the English sparrow. A pair tried to nest in the vines on my neighbor's porch. Three eggs were laid before the sparrows found the nest. Then the sparrows broke one of the eggs. The cardinals succeeded in hatching one young, but the sparrows killed it and tore the nest to pieces. Another pair of cardinals tried to build a nest in some grape vines near the house, but as fast as the cardinals would build it the sparrows tore it down. The cardinals finally got discouraged and went away. Three pairs of cardinals nested near my house last summer. Senator Robert Glenn found the first cardinal here in 1906. Now there are dozens of them.

MRS. JODA MALIN.

Wayalusing, Wis.

NOTES—HERE AND THERE

Conducted by the Secretary

At its last annual meeting The Wilson Club passed resolutions supporting national legislation designed to prohibit the construction of dams and water power plants in our National Parks. It is good news to know that this amendment passed and now no such development can be carried out without special act of Congress. By the former law such permission could be granted by the Federal Power Commission.

Dr. R. M. Strong, our President, spent his vacation as usual on the Great Lakes, where at one time or another he has visited practically all of the breeding colonies of gulls and terns. During the "indoor season" Dr. Strong spends his spare time delving into the little worked field of avian anatomy.

Our worthy contemporary, The Auk, finds itself a victim of the printer's strike and its July number is something like two months behind.

The annual meeting of the American Ornithologist Union will be held in Philadelphia during the week of November 14th, 1921.

Additional volumes of the Life Histories of North American Birds are being looked forward to with keen anticipation. Mr. A. C. Bent's first volume, on The Diving Birds, is to be followed by one on The Gulls and Terns, which is now set up in type. The manuscript for the third volume, covering Pelicans and Petrels, is complete and the author is at work on a fourth volume, which will treat of the Ducks and Geese. When the species not covered by Bendire have been disposed of, it is to be hoped that the way will be made clear for the republication of the Bendire volumes, revised to date and uniform in size with those now being issued.

Bird banding has received a most remarkable impetus during the past few years and to complete the "chain of evidence" a vigorous campaign of winter trapping is desirable. This is particularly needed from southern localities and offers a fertile suggestion to our southern members. Full instruction and explanation of the work is embodied in Department Bulletin, "Instructions for Bird Banding," by F. C. Lincoln, and copies may be secured gratis by addressing The Biological Survey in Washington.

Perhaps no one item is so useful for attracting and retaining winter birds about the premises as a brush pile constructed in a thicket. The writer has a copse near his home in which he constructed a brush pile of considerable size and no less than five species of winter birds used it as a refuge and roosting place throughout the past winter. The higher the pile the more acceptable it is.

Dr. Lynds Jones has returned from his usual summer "overland" trip to the Pacific coast. The party of biological students, whose studies and observations he directed en route, closed their notebooks at Tacoma and, scattering, left our editor to pursue his way homeward according to his own whim.

Perhaps none of our birds have benefited as greatly, through federal legislation, as has the robin. It is now an abundant summer bird in latitudes where it was formerly known only as a migrant and in the south, in late winter, is present at times in incredible numbers. The Biological Survey is finding itself in the difficult position of having to give relief to northern orchardists and at the same time to uphold the import of the law. Six northern states have been allowed to issue permits for the shooting of Robins between May 15th and July 15th, where they are found to be injuring cherries and other crops. Such permits will no doubt be often abused but, all things considered, any other course than the one pursued would cause an undesirable reaction in the real cause of bird protection.

Particular attention is called to the paper by Mr. Frank L. Burns, now running in The Bulletin, as being one of the most valuable contributions to ornithology which has appeared in late years. Mr. Burns' paper in the March, 1915, Bulletin, on the incubation period of our native birds, was a fitting prelude to the present articles.

Reports are coming in from our members that "the woods are full of 'em." Not some rara avis, if you please, but the illicit rum still, which vies with Bubo and the Pileated Woodpecker in seeking out the dark and unfrequented corners of our woodland fastnesses. The writer has himself artlessly sidestepped more than one of them during the season just passed.

Dr. Alexander T. Wetmore has recently returned from a year's stay in Argentine, Paraguay and Uruguay, where he was sent by the Biological Survey to investigate the status of those of our migratory birds which spend the winter there. It is to be hoped that the information gained will help to clarify some of the questions which have heretofore been the subject of conjecture; for instance, we should be glad to learn if our wintering chimney swifts were to be found and if so in what numbers. Dr. Wetmore's chief mission was to gain accurate information on which to base a migratory bird treaty with South American countries.

Members should keep in mind the fact that our annual meeting will be held in Chicago during the week following Christmas, and plan to be on hand. Further particulars will be given in our December issue.

PUBLICATIONS REVIEWED

BIOLOGICAL SURVEY OF LAKE MAXINKUCKEE, IND., BY EVERMAN AND CLARK *

Residents of the middle west, particularly those of Indiana, will find in this work a large fund of information on the fauna common to the region. That portion of the two volumes devoted to a list of the birds is relatively small, covering 100 of the 1170 pages and recording 175 species. The list has been presented in annotated form and no space has been consumed with descriptions, range, etc., which in the present case seems commendable. A considerable lot of original information is contained in the notes and where species are rare the author has given definite dates and records instead of indulging in generalities. This practice could well be followed by other authors since the day is past when we are content to take an author's statement, regarding an unusual species, that "it is still to be found," without giving supporting data. The water birds have been most partially noted, as might be expected, and the author has shown particular interest in the nidification of the summer residents. Professor Barton Warren Everman is the author of this section of the work.

Other chapters deal more or less exhaustively with the mammals, reptiles, amphibians, fish, mollusks, crustaceans, insects, etc., etc., and serve well to call our attention to the fact that there is much of interest in nature aside from ornithology. The Indiana Department of Conservation under the interested direction of Mr. Richard Lieber is to be commended for its part in getting this work "through the mill" and before the public.

A. F. G.

*Lake Maxinkuckee, a physical and biological survey. By Barton Warren Everman and Howard Walton Clark. Pub. by The Dept. of Conservation, State of Indiana, 1920. Vols. I and II, 660+512 pp., 91 illustrations.

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